

Application Serial No. 10/674,703  
Response/Amendment dated November 23, 2005  
Reply to Office Action mailed August 24, 2005

### REMARKS

The Examiner has rejected claims 1-5, 12, 20 and 21 under 35 U.S.C. § 102(e) as being anticipated by Ludviksson et al. U.S. Patent No. 6,894,769. Claims 1-9, 12, 14-17, 20-22, and 26-30 are rejected under § 103(a) as being unpatentable over Burnham et al. U.S. Patent No. 5,947,053 in view of Tsai et al. U.S. Patent No. 6,592,817. Claims 10, 11 and 13 are rejected under § 103(a) as being unpatentable over Burnham et al. and Tsai et al., and further in view of Chow et al. U.S. Patent No. 6,872,322. Claim 18 is rejected under § 103(a) as being unpatentable over Burnham et al. and Tsai et al., and further in view of Kim et al. U.S. Patent No. 6,436,303. Claim 19 is rejected under § 103(a) as being unpatentable over Burnham et al. and Tsai et al., and further in view of Suzuki et al. U.S. Patent No. 6,677,549. Claims 23, 24 and 25 are rejected under § 103(a) as being unpatentable over Burnham et al. and Tsai et al., and further in view of Nakata et al. U.S. Patent No. 5,989,928. Claims 31 and 32 are rejected under § 103(a) as being unpatentable over Ludviksson et al.

Applicants thank the Examiner, Patricia A. George, for the telephone interview that occurred on July 22, 2005 between Applicants' representative, Kristi L. Davidson, and the Examiner with regard to the Restriction/Election. In that telephone conversation, the Examiner indicated that claims 1-44 were pending in the application and subject to restriction and/or election requirement. Specifically, we understand that the Examiner has grouped the claims between Group I, claims 1-32, drawn to a method of monitoring and Group II, claims 33-44, drawn to an apparatus (processing system). Applicants hereby elect Group I, claims 1-32, directed to the method. Non-elected claims 33-44 are cancelled herein without prejudice to their re-filing in a divisional application.

With respect to the rejection of Claims 31 and 32 under § 103 over Ludviksson et al., the Ludviksson et al. patent is citable only under § 102(e). The claimed invention was, at the time the invention was made, commonly owned with the subject matter of the Ludviksson et al.

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patent. In accordance with § 103(c), Applicants request that the Ludviksson et al. patent be disqualified as prior art. Thus, Applicants respectfully request that the rejection of claims 31 and 32 be withdrawn. There being no other rejections against claims 31 and 32, the claims are now believed to be in condition for allowance.

With respect to the rejection of Claim 1-5, 12, 20 and 21 under § 102(e) over Ludviksson et al., Applicants respectfully traverse. Independent claim 1, as amended herein, distinguishes over the Ludviksson et al. patent for at least the reasons that the system component "consists of quartz,  $\text{Al}_2\text{O}_3$ , SiN or SiC," and the erosion product that is monitored is an erosion product thereof. Ludviksson et al. is directed to integrating emitters into the system component to allow for monitoring of the component status. As explained in col. 5, line 42 to col. 6, line 57 of Ludviksson et al, the materials used to fabricate system components, e.g., quartz, alumina, carbon or silicon carbide, are substantially transparent to plasma light over a wide range of wavelengths. Thus, Ludviksson et al. use the integrated emitters, which when exposed to a plasma, emit fluorescent light.

For there to be anticipation of the claims, as amended herein, Ludviksson et al. must teach each and every element of the claimed invention. Ludviksson et al. do not teach or suggest a system component that "consists of" the recited materials, since the emitters are precluded by the term "consisting of," and Ludviksson et al. do not teach or suggest that the erosion product that is monitored is a product of erosion of one of quartz, alumina, silicon nitride or silicon carbide by the reactant gas. Therefore, there can be no anticipation of the claimed subject matter of claim 1 and its dependent claims. It is therefore respectfully requested that the rejection of claims 1-5, 12, 20 and 21 under § 102(e) over Ludviksson et al. be withdrawn. It is further noted that the reference is disqualified under § 103(c) as a reference for purposes of obviousness. Thus, Applicants believe all pending claims are allowable over the Ludviksson et al. patent.

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With respect to the rejection of Claims 1-9, 12, 14-17, 20-22, and 26-30 under § 103(a) over Burnham et al. in view of Tsai et al., Applicants traverse. Claims 3-4, 22 and 26-29 are cancelled herein, thereby rendering the rejection moot as to those claims. As to claims 1-2, 5-9, 12, 14-17, 20-21 and 30, Burnham et al., alone or in combination with Tsai et al., do not teach or suggest that the erosion product that is monitored is a product of erosion of one of quartz, alumina, silicon nitride or silicon carbide from the system component itself by the reactant gas. Both Burnham et al. and Tsai et al. avoid erosion of the system component, whereas Claim 1 and its dependent claims in the present application permit the system component to be eroded as an indication of when to stop the process. More specifically, Burnham et al. provide a wear indicator layer between a protective layer and the system component and the system is monitored to detect erosion of the wear indicator layer, as indirect evidence that the protective layer has been eroded. The process of Burnham et al. ensures that the underlying system component is never eroded by the reactant gas. Tsai et al. states in col. 1, lines 57-62, that "[i]t is also desirable to clean chamber walls and surfaces without erosion of chamber surfaces" and "[t]he present invention satisfies these needs." The monitoring process of Tsai et al. monitors the effluent in various ways, but there is no teaching or suggestion that the effluent be monitored for an erosion product of the system component itself. In fact, both Burnham et al. and Tsai et al. teach against monitoring the system for release of an erosion product of the system component itself, since both specifically strive to avoid any erosion of the system component. Where the prior art teaches against the claimed invention, the rejection cannot stand. Therefore, Applicants respectfully request that the rejection of claims 1-2, 5-9, 12, 14-17, 20-21 and 30 under § 103(a) be withdrawn.

With respect to the rejection of Claims 10, 11 and 13 under § 103(a) over Burnham et al. in view of Tsai et al. and further in view of Chow et al., Applicants traverse for at least the same reasons provided with respect to the rejection of claim 1 over Burnham et al. in view of Tsai et al. The Chow et al. patent does not cure the deficiencies of Burnham et al. and

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Tsai et al. Specifically, Chow et al. do not teach or suggest monitoring the system for release of an erosion product of the system component itself. It is therefore respectfully requested that the rejection of Claims 10, 11 and 13 under § 103(a) be withdrawn.

With respect to the rejection of Claim 18 under § 103(a) over Burnham et al. in view of Tsai et al. and further in view of Kim et al., Applicants traverse for at least the same reasons provided with respect to the rejection of claim 1 over Burnham et al. in view of Tsai et al. The Kim et al. patent does not cure the deficiencies of Burnham et al. and Tsai et al. Specifically, Kim et al. do not teach or suggest monitoring the system for release of an erosion product of the system component itself. It is therefore respectfully requested that the rejection of Claim 18 under § 103(a) be withdrawn.

With respect to the rejection of Claim 19 under § 103(a) over Burnham et al. in view of Tsai et al. and further in view of Suzuki et al., Applicants traverse for at least the same reasons provided with respect to the rejection of claim 1 over Burnham et al. in view of Tsai et al. The Suzuki et al. patent does not cure the deficiencies of Burnham et al. and Tsai et al. Specifically, Suzuki et al. do not teach or suggest monitoring the system for release of an erosion product of the system component itself. It is therefore respectfully requested that the rejection of Claim 19 under § 103(a) be withdrawn.

With respect to the rejection of Claims 23, 24 and 25 under § 103(a) over Burnham et al. in view of Tsai et al. and further in view of Nakata et al., Applicants traverse for at least the same reasons provided with respect to the rejection of claim 1 over Burnham et al. in view of Tsai et al. The Nakata et al. patent does not cure the deficiencies of Burnham et al. and Tsai et al. Specifically, Nakata et al. do not teach or suggest monitoring the system for release of an erosion product of the system component itself. It is therefore respectfully requested that the rejection of Claims 23, 24 and 25 under § 103(a) be withdrawn.

In view of the foregoing amendments to the claims and remarks given herein, Applicants respectfully believe this case is in condition for allowance and respectfully request

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allowance of the pending claims. If the Examiner believes any detailed language of the claims requires further discussion, the Examiner is respectfully asked to telephone the undersigned attorney so that the matter may be promptly resolved. The Examiner's prompt attention to this matter is appreciated.

Applicants are of the opinion that no additional fee is due as a result of this amendment. If any charges or credits are necessary to complete this communication, please apply them to Deposit Account No. 23-3000.

Respectfully submitted,

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